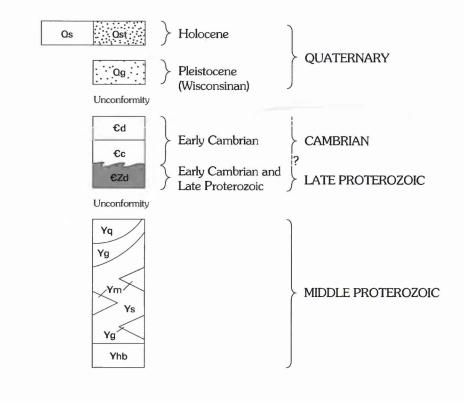


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

A mantle of wind-deposited pale-yellowish-orange to light-brown fine sand and silt is present over the map area but is not shown. This eolian mantle is as thick as 3–4 ft on the lower parts of slopes over glacial till. Glacial till is a poorly sorted, nonlayered, and nonbedded to foliated and bedded mixture of particles from clay to boulder size. It forms a blanket mostly 9–18 ft thick over most of the area but is thin to absent in areas of abundant bedrock exposures. Most till is silt rich, compact, yellow brown, foliated, and layered. Looser, sandier till makes up hummocks in the Swale Meadow area and along the mid-reaches of Ten Kilns and Big Black Brooks.

Os Swamp deposits (Holocene)—Chiefly silt, sand, and clay mixed with variable amounts of muck, peat, and organic debris in poorly drained areas

Stream terrace deposits (Holocene)—Chiefly gravel, sand, (9 ft) terraces along modern streams

Glacial stream deposits (Pleistocene, Wisconsinan)—Gravel and sand in meltwater stream deposits mostly less than 10–30 ft thick. Deposited in and around stagnant ice blocks by glacial meltwater streams whose courses were only partly integrated with the present topography

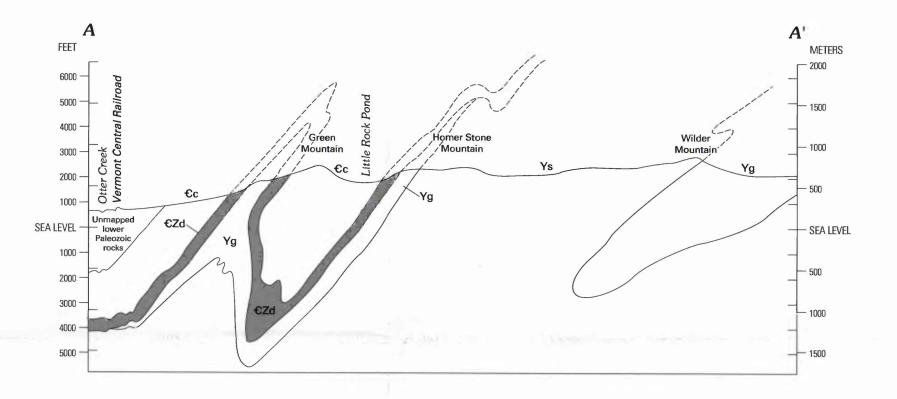
Dunham Dolomite of Doll and others (1961) (Early Cambrian)—Thinly layered, gray- to buff-weathering dolomite with thin sandy partings

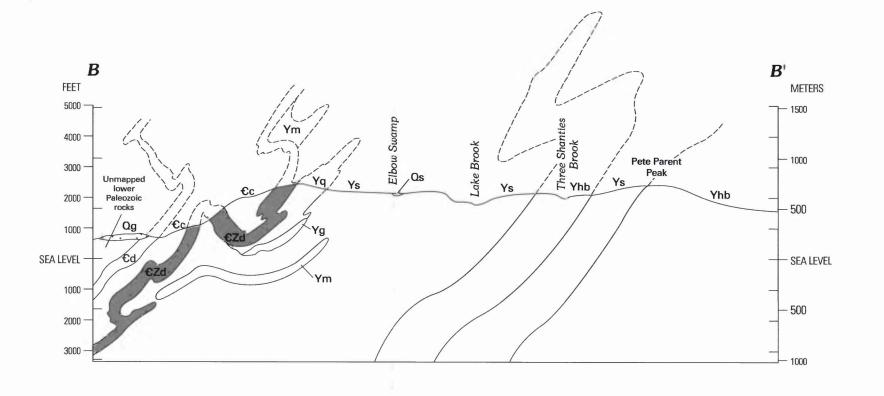
Cheshire Quartzite (Early Cambrian)—Mostly white- to buff-weathering, thin- to massive-layered (1 in—6 ft) orthoquartzite and sugary-textured quartz metasandstone; lesser vitreous quartzite, micaceous quartzite, and argillaceous quartzite. Rare laminae are locally rich in biotite. Quartzite is locally ankeritic and appears massively vitric where relict bedding is obscured by tight folding. Lower part is thinly layered with partings of micaceous quartzite and rare, thin, dark phyllite

Dalton Formation (Early Cambrian and Late Proterozoic)—Chiefly feld-spathic metasandstone, micaceous metasandstone, and metagraywacke. Less abundant gray pyritic quartzite, micaceous quartzite, fine-grained, graphitic muscovite phyllite, and grayish-green, fine-grained muscovite-chlorite schist. Unit includes local basal lenses of polymict boulder and pebble conglomerate as well as basal and intraformational lenses of quartz-pebble conglomerate with distinctive bluish-gray quartz pebbles, and of basal quartz-granule conglomerate with an ankeritic matrix

Mount Holly Complex (Middle Proterozoic)—A unit of mostly metasedimentary and metavolcanic rocks that were pervasively sheared and deformed at high metamorphic grade and later retrograded and locally sheared in the greenschist facies. The metamorphisms were accompanied locally by more or less migmatization and probable metamorphic differentiation and segregation. Feldspathic gneisses and schists are banded and differentiated into light- and dark-colored fractions. Strongly developed foliation, compositional layering, and mineral streaking and augen textures are common in the feldspathic gneisses. Older pods, lenses, and sills of segregated quartz, quartz-tourmaline rock¹, stringers of vein quartz, and small, irregular bodies of quartzofeldspathic rock and sills of muscovite-bearing granite pegmatite are common. Younger veins of quartz-epidote-carbonate rock are associated with thin-layered mafic gneiss and with calc-silicate lithologies. Higher grade minerals such as garnet (biotite) in pelitic schists and amphibole-(clinopyroxene)-calcicplagioclase in mafic rocks are altered partially to completely to greenschist minerals such as chlorite or chlorite-epidote-carbonate. Tremoliteactinolite-quartz-epidote or talc-chlorite-carbonate is abundant in calcsilicate rocks and marbles. Late trace sulfides are present as cubes, trace Fe oxides are present as octahedra, and trace Fe-carbonate is evidenced by limonite- and pyrolucite-stained voids. The formation is mapped in this area as five separate units of distinctive

The formation is mapped in this area as five separate units of distinctive or dominant lithology. These include, from oldest to youngest, horn-blende gneiss, schist, enclosing lenses of calc-silicate rock and impure marble, granite gneiss, and vitreous quartzite





Vitreous quartzite—Mostly massively layered bluish-gray- to white-weathering, dense vitreous quartzite with hackly fracture and white, thinly layered quartzite with muscovite-rich partings; lesser schistose micaceous quartzite. Quartzite contains a few percent to trace amounts of magnetite, hematite, or fine pyrrhotite locally. Local thin lenses (2–3 in) of quartz pebbles and granules occur in a quartz-muscovite-schist matrix at the base of the unit across the northwestern slope of Buckball Peak

Granite gneiss—White- to pink-weathering microcline-oligoclase-quartz-biotite granite gneiss; intrusive, or possibly metavolcanic, in origin. Gneiss is mineralogically and compositionally more or less homogeneous on a hand-specimen to small-outcrop scale but is locally weakly and irregularly layered, with lenses and layers slightly richer and poorer in biotite. Most gneiss is so strongly foliated as to be schistose, with quartz and feldspars distributed in sheets, knots, and oval augen, and with biotite aggregated in sheets and oval patches. Gneiss contains trace amounts to a few percent of muscovite and chlorite, both subordinate in abundance to biotite (typically 7–10 percent)

Schist—Chiefly rusty-weathering, fine- to medium-grained muscovite-quartz-biotite-(garnet)-chlorite schist, locally with trace sulfide and more abundant tourmaline; and lesser white to light-grayish-green, medium-grained, feldspathic schistose gneiss. Some schist lenses are lead-gray, graphitic, medium-grained muscovite-quartz-biotite-garnet schist with 0.20- to 0.25-in garnets and visible black tourmaline prisms. Layers of ribbon quartzite in schist increase in abundance near contact with vitreous quartzite unit. Lenses of layered, medium-grained hornblende-plagioclase-quartz gneiss, thinly layered greenish-yellow calc-silicate rock, and mostly fine-grained, dark-greenish-gray amphibolite and hornblende-chlorite schist are widespread throughout the unit as both thin layers (10

Ym Calc-silicate rock and marble—White- to dark-green-weathering, layered to schistose, coarse- to medium-grained rocks containing varying proportions of distinctive calc-silicate minerals: tremolite-actinolite, calcite, epidote, and diopside, and, locally, trace pyrrhotite and chalcopyrite. Unit includes some thinly layered, rusty-weathering graphitic calcite marble interlayered with dark-gray quartzite and rare coarse-grained pink calcite marble

in) and thicker zones (30-60 ft)

Hornblende gneiss—Mostly massively layered and parted, to thinly layered and locally banded, quartz-plagioclase-biotite-hornblende gneiss, with chlorite in places. Gneiss is medium grained and foliated and locally is flaser textured or schistose. Includes some coarse-grained gneiss with feldspar augen that is regularly interlayered with medium-grained hornblende-plagioclase amphibolite. Thick lenses of massive, dark-greenish-gray, coarse-grained amphibolite and finer grained, schistose amphibolite are abundant across the hill northeast of Big Mud Pond and on the crest and eastern slopes of Pete Parent Peak. Minor thin lenses of biotite schist, hornblende schist, and quartzite are widespread throughout the unit

 $^1\!H\!yphenated$ mineral names show decreasing order of mineral abundance in rock.

EXPLANATION OF MAP SYMBOLS

Contact—Approximately located. Dotted where concealed

High-angle fault—Dashed where approximate; U, upthrown side; D, down-thrown side

Thrust fault—Sawteeth on upper plate MAJOR FOLDS

(Symbols show approximate location of axial trace of fold, dip of limbs, and plunge direction of axis where known)

Inclined fold of Fold Set 1; probably Late Proterozoic

Folds of Fold Set 2; Paleozoic

Overturned anticline

Overturned syncline

Folds of Fold Set 3; Paleozoic

→ Anticline

Axis of asymmetric fold—Shows map sense of fold; point of observation is

 $\stackrel{\Xi}{\longrightarrow}$ 26 Axis of symmetric fold—Shows map sense of fold; point of observation is

PLANAR FEATURES

(May be combined with linear features)

Strike and dip of beds

Strike and dip of foliation

Inclined

Strike and dip of cleavage

Vertical

Mostly parallel to bedding in cover rocks; parallel to compositional layering in basement paragneiss

LINEAR FEATURES

(May be combined with planar features)

Bearing and plunge of lineation—Letter symbol shows elongate element:

C, crenulation axis (crinkle lineation); B, biotite patches; H, hornblende

needles; M, mica streaks; P, axis of elongate pebble; Q, quartz rod
OTHER FEATURES

Site of photograph in text—Number is text figure number

GEOLOGIC MAP AND CROSS SECTIONS OF THE BIG BRANCH AND PERU PEAK WILDERNESSES AND THE WILDER MOUNTAIN ROADLESS AREA, RUTLAND AND BENNINGTON COUNTIES, VERMONT